EMILY ZENG

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Skills Summary

Languages

fluent

- Python
- C++

familiar

- NodeJS
- HTML/CSS
- C

Technologies / Tools

- Keras/Tensorflow
- LSTM
- CNNs
- Sk-learn
- Flask
- Q-learning
- LSTM

Education

University of Waterloo

Mechatronics Engineering

2016 – 2021

Work Experience

Computer Vision Engineer – Synapse Technology, Palo Alto — Jan-April 2019

Developed and analyzed CNN models for detecting threats from x-ray scans

- Developed new data augmentation method, improving mAP score numbers
- Trained and evaluated production models being deployed across the world
- Improved data management of millions of images through consensus and cleanup system
- Created better tools used for preprocessing and evaluation of model

Data Scientist – Praemo, Waterloo — May-Aug 2018

Built a neural network library to predict machine failure in industrial robots

- Used LSTM to develop a general library for detecting anomalies in time series, contributing to company's intellectual property
- Pre-processed client data and applied neural networks to monitor robot conditions, then evaluated and visualized data and results

Robotics Software Developer – ESI, Markham — Sep-Dec 2017

Solved robotic navigation problem using reinforcement learning (Q-learning)

- Used Keras to train a multilayer artificial neural network with Python
- Converted trained model to C++ to fit it on a microcontroller
- 95% success rate in simulation and 85% success rate on actual robot

ML Course Developer – Stackup/NUS, Singapore — Jan-April 2017

Assisted in developing machine learning driven data science course

- Developed a facial recognition program using SVM
- Created a MEAN stack E-commerce website for use in case studies

Projects

Quiz it! – Yhacks, Yale — Dec 2017

2nd place overall, winner of Google API prize and Best Education Hack

- Translated photos of text into fill-in-the-blank questions for Alexa skill
- Extracted important sentences and removed highest salience noun
- Dereferenced pronouns by assuming a Subject-Verb-Action structure

Noter – Hack Harvard, Harvard — Nov 2017

- Parse video lectures into text segments with contextual figures for study notes
- Split up videos using face detection to find pauses in writing
- Highlighted keywords using entity analysis of audio transcript

Troll Index – EngHack, Waterloo — May 2017

Hack Harassment winner

- Built an internet troll identifier for reddit using Python's Natural Language Toolkit's sentiment analysis